We claim:

1. An aircraft capable of supersonic flight, comprising:

a fuselage;

a wing; and

an engine nacelle, wherein the fuselage and wing are configured with a tailored area/lift distribution including a relaxed bluntness nose and a gull dihedral wing configuration that reduce sonic boom disturbance, and the gull dihedral wing is configured to carry lifting force to the trailing edge of the wing to create an expansion at the trailing edge of the wing that reduces aft sonic boom ground shock strength.

2. The aircraft of claim 1, further comprising a shock cancellation shroud around the engine nacelle.

3. The aircraft of claim 2, wherein the blunt nose further comprises an inlet and a slot, wherein the slot is configured to provide an outlet for airflow through the inlet.

4. The aircraft of claim 2 further comprising an upward reflex on a portion of the upper and lower surfaces of the wing.

5. The aircraft of claim 4 further comprising an engine inlet at the front of the engine nacelle, wherein the inlet in positioned aft of the upwardly reflexed portion of the wing.

6. The aircraft of claim 1 wherein said body portion comprises a flying wing.

7. The aircraft of claim 4 wherein the shock cancellation shroud extends around a portion of the length of the engine nacelle.

8. The aircraft of claim 7 wherein the gull dihedral wing comprises one of: an anhedral outboard wing portion, and an outboard wing portion without dihedral.

9. The aircraft of claim 5 wherein the shock cancellation shroud is positioned behind the engine inlet.

10. The aircraft of claim 9, wherein the volume of the mid-fuselage portion is reduced above the wing to generate an airflow expansion on a sloped portion of the mid-fuselage to lower the pressure above the wing in the area covered by the expansion, thereby reducing the angle-of-attack required to generate the same lift and reducing pressure below the wing.

11. An aircraft capable of supersonic flight, comprising:

a body portion including a relaxed bluntness nose, a fuselage, a wing, and an engine nacelle mounted below the wing;

wherein the area/lift distribution of the body portion is tailored to reduce sonic boom disturbance; and

the volume of the mid-fuselage portion is reduced above the wing to generate an airflow expansion on a sloped portion of the mid-fuselage to lower the pressure above the wing in the area covered by the expansion.

12. The aircraft of claim 11, further comprising a shock cancellation shroud around the engine nacelle.

13. The aircraft of claim 12, wherein the blunt nose further comprises an inlet and a slot, wherein the slot is configured to provide an outlet for airflow through the inlet.

14. The aircraft of claim 12 further comprising an upward-reflex on a portion of the upper and lower surfaces of the wing.

15. The aircraft of claim 14 further comprising an engine inlet at the front of the engine nacelle, wherein the inlet in positioned aft of the upwardly reflexed portion of the wing.

16. The aircraft of claim 11 wherein said body portion comprises a flying wing.

17. The aircraft of claim 14 wherein the shock cancellation shroud extends around a portion of the length of the engine nacelle.

18. The aircraft of claim 17 wherein the gull dihedral wing comprises an outboard wing portion without dihedral.

19. The aircraft of claim 17 wherein the gull dihedral wing comprises an anhedral outboard wing portion.

20. The aircraft of claim 15 wherein the shock cancellation shroud is positioned behind the engine inlet.

21. The aircraft of claim 11, further comprising a gull dihedral wing, wherein the wing is configured to carry lifting force at the trailing edge of the wing to create an expansion at the trailing edge of the wing that reduces aft sonic boom ground shock strength.

22. A method for reducing sonic boom disturbances generated by an aircraft comprising:

tailoring the cross-sectional area distribution of the aircraft to minimize the rate of change in cross-sectional area; and

removing constraints on tailoring the cross-sectional area distribution by:

increasing the length of the aircraft's pressure distribution by incorporating a gull dihedral wing on the aircraft; and

configuring the camber of the wing to generate an expansion at the trailing edge of the wing, thereby reducing aft shock coalescence.

23. The method of claim 22 further comprising:

positioning a shroud around a portion of an engine nacelle mounted under the wing, wherein the shroud cancels at least a portion of shock waves generated by the nacelle during flight.

24. The method of claim 22 further comprising:

positioning an engine nacelle under an upwardly reflexed portion of the upper and lower surfaces of the wing.

25. The method of claim 22 further comprising:

configuring a mid-portion of the aircraft to generate an airflow expansion above the wing, thereby reducing the pressure required on the upper and lower surfaces of the wing to generate the same amount of lifting force.

26. An aircraft capable of supersonic flight, comprising:

a fuselage;

a wing;

an engine nacelle; and

a high-mounted lifting aft tail, wherein the fuselage and wing are configured with a tailored area/lift distribution including a relaxed bluntness nose that reduces sonic boom disturbance, and the tail is configured to carry lifting force to the trailing edge of the aircraft to create an expansion at the trailing edge of the tail that reduces the aft sonic boom ground shock strength.

27. The aircraft of claim 26 wherein the wing is configured with a gull dihedral.

28. The aircraft of claim 26 further comprising a fixed upward reflex on a portion of the upper and lower surfaces of the wing.